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- A1
1. (Amended) A DNA sequence which is selected from the group consisting of (a) at least part of the sequence set out in the appended sequence listing; and (b) a variant of a sequence (a) which encodes a polypeptide which is at least 80%, identical with the corresponding peptide as set out in table II; provided that it is not a sequence encoding all or part of the polypeptide consisting of amino acids 1-920 encoded by *mon AI* as set out in table II.
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8. (Amended) A DNA sequence according to claim 1 encoding any one or more of the domains as set out in Table I or a variant or part thereof.
9. (Amended) A DNA sequence according to claim 1 which has a length of at least 30 bases.
10. (Amended) A recombinant cloning or expression vector comprising a DNA sequence according to claim 1.
11. (Amended) A transformant host cell which has been transformed to contain a DNA sequence according to claim 1 and which is capable of expressing a corresponding polypeptide.

12. (Amended) A hybridisation probe which is a DNA sequence according to claim 1.
13. (Amended) A method of detecting a PKS cluster comprising using a probe according to claim 12 to detect a PKS cluster, optionally followed by isolation of the detected cluster.
- A2
cont. 14. (Amended) A method of detecting genes comprising using a probe according to claim 12 which encodes at least part of a polypeptide having a known function to detect genes encoding polypeptides having analogous function.
15. (Amended) A method according to claim 14 wherein the polypeptide of known function is AT of module 5 or the regulatory protein encoded by *mon RI*.
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- A3 17. (Amended) A method of detecting the presence of a gene cluster which governs the synthesis of a polyether, which comprises using a probe according to claim 16, and optionally isolating a gene cluster detected thereby.
18. (Amended) A method of detecting a gene comprising using a probe according to claim 12 which comprise a polynucleotide which binds specifically to a gene responsible for levels of activity of the monensin gene cluster, for detecting an

analogous gene in a gene cluster for biosynthesis of another polyketide, optionally followed by a step of manipulating the gene detected thereby to alter the level of expression of said other polyketide.

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Cont.
19. (Amended) A method according to claim 18 wherein the gene is a regulatory gene, resistance gene or thioesterase gene.
20. (Amended) A method of expressing a heterologous gene in *S. cinnamomensis* comprising inserting said gene so that it is expressed under the control of the *mon RI* gene or variant and a monensin promoter.
21. (Amended) A method of expressing a polyketide other than monensin which includes using a portion of the monensin gene cluster encoding a polypeptide having chain terminating activity, comprising at least one of *mon AIX* and *mon AX* or a mutant, allele or other variant thereof encoding a polypeptide having chain terminating activity, to effect chain release of said polyketide other than monensin.
22. (Amended) A method of synthesising a polyketide other than monensin which includes using a portion of the monensin gene cluster encoding a polypeptide having carbon-carbon double bond isomerase activity comprising at least one of

mon BI and *mon BII* or a mutant, allele or other variant thereof having isomerase activity to provide a desired stereochemical outcome in the synthesis of said polyketide other than monensin.

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cont.
23. (Amended) A polypeptide encoded by a portion of the monensin gene cluster, comprising at least one portion selected from *mon BI* and *mon BII* or a mutant, allele or other variant thereof, having carbon-carbon double bond isomerase activity, or at least one of *mon AIX* and *mon AX* or a mutant, allele or other variant thereof having chain terminating activity.
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26. (Amended) A method for the biosynthesis of a polyketide other than monensin which comprises using a portion of the monensin gene cluster encoding a peptide having epoxidase or cyclase activity, to provide a said activity in the biosynthesis of said polyketide other than monensin.
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- A5
29. (Amended) A process according to claim 27 wherein the starter unit also includes an AT_q domain derived from an AT domain which is naturally associated with the KS domain.
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- A⁶ 33. (Amended) A DNA sequence according to claim 30 wherein said loading module is adapted to load a starter unit other than a starter unit normally received by the adjacent extension module.

- A⁷ 35. (Amended) A polyketide synthase encoded by the DNA sequence of claim 30.

- A⁸ 37. (Amended) A vector containing a DNA sequence of claim 30.

38. (Amended) A transformant cell transformed to contain a DNA sequence of claim 30.

- A⁹ 42. (Amended) A method of producing monensin comprising culturing the organism of claim 41.

Please add new claims 46 and 47 as follows:

- A¹⁰ 46. (New) A DNA sequence according to claim 1 which is a variant of a sequence (a) which encodes a peptide which is at least 90% identical with the corresponding peptide as set out in table II.

47. (New) A DNA sequence according to claim 1 which has a length of at least 60 bases.